

Machinery.

Index to Vol. 4.

September, 1897, to August, 1898.

1898.

THE INDUSTRIAL PRESS,
9 to 15 Murray St.,
New York.

21641

21641

Index to Volume IV.

Accurate Cost Keeping System, An, H. M. Norris..... 154
 Alignment of Engine Lathes, S. Ashton Hand..... 2
 Algebra, Why Study, Retsel 274
 American Shop, A Modern..... 9
 American Machinery 80
 Among the Shops, From..... 135
 Drill Press Fixtures..... 240
 Drilling a Curved Hole..... 240
 Novel Key Seater, A..... 240
 Milling Fixture 240
 Triangular Parallels 240
 Making a 1½-Pound Hammer by Hand in Ten Minutes 271
 Rotary Planer 291
 Unique Lathe, A..... 271
 Chinese Typewriter at Lockport, N. Y..... 271
 Milling Mch. Blunder, A 341
 E. & B. Holmes Mch. Co.'s 341
 Perforating Postage Stamps 341
 Some Heavy Chips 342
 Tools for Boring Holes..... 342
 The Ball Question..... 343
 Holly Lathe Problem..... 343
 From Cleveland and Springfield, Ohio 377, 378
 Another Lesson in Milling, Milo 284
 Arbor, A Neat Cuter, E. L. O. K..... 383
 Attend to Business, Slow Pay 213
 Automatic Gear Cutter, A New 139
 Automatic Tapping Machine 92
 Belting, The Principles of, Retsel 393
 Belting, High Speed..... 57
 Bevel Gear Formula, F. W. Clough 152
 Bevel Gears, Cutting with Correct Teeth 295
 Bicycle Efficiency Tests, Eldridge & Preston..... 333
 Biggest Pump in the City, The 16
 Blowers, The Design of Fan, W. B. Snow 374
 Boiler and Boiler Setting, The Le Van..... 227
 Books for Study and Reference in Steam Engineering 115
 Boring and Drilling Machine, Portable 109
 Boring Large Cylinders in a 72-Inch Lathe, Method of, Alfred Dunn 91
 Brass Working Tools (3), Fred H. Colvin (4)..... 18, 71
 Brass Castings, "Burning in," C. Vckers 208
 Brass Working Tools (3)..... 18
 Brass Working Tools (4)..... 71
 Caliper, A New Micrometer. 392
 Center Grinder 59
 Centers, Square 56
 Chinese Foot, The..... 344
 Chinese Mechanical Methods, Hemenway 344
 Cincinnati, The Way Work Is Done in, H. M. Norris. 101
 Clearance and Compression, F. F. Hemenway 77
 Comparative Figures, Frank Gleason 275
 Cone Designing, A Problem in, H. M. Norris 82
 Contrast, A, The "Maine" and the "Monitor," F. C. Hudson 293
 Convention, The Hartford..... 24
 Countershaft, Variable Speed 360
 Correspondence School Investigation 71
 Cutting Tools, Single-pointed and many pointed, Bell Crank 353
 Cutting Bevel Gears, J. M. Lynch 307
 Cutting Bevel Gears with Correct Teeth 299
 Cylinders in a 72-Inch Lathe, Method of Boring Large, Alfred Dunn 91
 Cylinders, A Machine for Finishing, J. H. Frances. 359
 Data Sheets, Machinery's.... 310
 Principal Dimensions for Spur Gears and Worm Gearing 298
 Examples for Spur Gears, Laying Out Blanks for Bevel Gears 298
 Design of Fan Blowers, The, W. B. Snow 374
 Die for Cutting Threads of Correct Pitch, A..... 141
 Dinner Party, A Novel..... 373

Don't Brag 270
 Does Technical Education Pay? 49
 Draft, Mechanical (2), Walter B. Snow 11
 (3) 36
 (4) 85
 (5) 133
 (6) 170
 (7) 203
 Drafting of Cams, The 119
 Drill, A New Multiple Spindle 59
 Drill Press, A New 13
 Drills, Sensitive Bench 93
 Drilling Attachment, A High Speed 28
 Drills, Gang of 20-power Feed Upright 92
 Drop Presses 32
 Drop Hammer, A Heavy 157
 Dynamometers, Transmission, Samuel Webber.... 216, 275
 Dynamometer, Some New Forms of Transmission, J. J. Flather 367
 Economy in the Generation and Use of Steam, W. H. Wakeman 22
 Editorial—
 Example not to Be Followed, An 14
 Improvement in Machine Design 14
 Machine Copying 48
 Technical Education Pay? Does 48
 American Machinery 80
 John Wedderburn, The Case of 80
 Machine Shop Fits 81
 Way of the Bicycle, The 114
 Mathematics 114
 Slotter, The Use of the 146
 Make It Plain 147
 Don't Turn Down the Drummer 178, 179
 Steam Boiler Efficiency—Comforts and Conveniences 179
 Emery Wheel and Grinding, The 214
 Corliss Engine, Economy of the 215
 School Laboratories, Work in 215
 School for Mechanics, Summer 280
 Barrel Calorimeter 280
 All Around Machinists. 312
 Technical Graduates—Bicycle Tests 346
 Reports in the Shop, Written 380
 Engine Friction, A Simple Test of 19
 Engine Lathes, Alignment of Engines of the "Maine," 2
 The 235
 English Shop, Some Notes from An, James Vose. 1
 Example Not to Be Followed, An 14
 Factory Without a Chimney, A 394
 Facts and Fancies About Steel, S. W. Goodyear 119
 Facts About Patents, by James W. See 349
 Face Grinding 356
 The Feat of a "Hammer Buster" 5
 Few Kinks, A, "Chips" 42
 Finishing Work 53
 Follower Bolt, About a 338
 Foreign Trade, J. A. Johnson 206
 Force Fits, More About, F. W. Clough 32
 Formulas, Horse Power and, Richards 186
 Fresh from the Press 65, 99
 130, 164, 194, 232, 265, 296, 322, 364, 398
 From Actual Practice, A Lesson in Milling, Milo 184
 Some Horrible Examples Found in New England Shops 318
 Enlarging a Boring Mill. 318
 An Expert in Gearing 318
 Gear Arithmetic, A Little 319
 From an English Source 190
 Gang of 20-inch Power-Fed Upright Drills 92
 Gasolene Launch Engines.... 192
 Gear Cutter, A New Automatic 139
 Gear Cutter, The "Victoria" 191
 Gear Cutting Machinery, American 313
 Gear Shaper, A 158
 Gearing, Spiral, W. H. Van Dervoort 323

Gear Wheels, Something About, Retsel 320
 German Workshops 15
 Grinding Valves, F. F. Hemenway 115
 Guns of Our Navy, The, Henry Hess 371
 "Hammer Buster," The Feat of a 5
 Hartford Convention, The 24
 Heating Surface of a Steam Boiler, The 339
 High Carbon vs. Low Carbon Steels 357
 Hollow and Solid Shafts of Equal Strength, William Sangster 148
 Home of the Flat Turret Lathe, The 39
 Horse-Power of a Water Fall 256
 Horse-Power Novelties 253
 How to Calculate, Design and Construct Electrical Machinery (4), Wm. Baxter, Jr. 20
 (5) 45
 (6) 88
 (7) 110
 How to Develop Our Machinery Trade A broad, Charles Davis 4
 How to Calculate, Design and Construct Electrical Machinery, W. Baxter, Jr. 45, 88, 110
 How and Why. 34, 62, 96, 129, 163, 192, 225, 263, 295, 361
 Improvement in Machine Design 14
 Independent Hose Company, The, Slow Pay 179
 Inking of Drawings, The 126
 Items of Mechanical Interest 260
 Belgian Valve Gear 260
 Feeding Boiler Purgers 260
 Portable Friction Brake. 260
 Riggs' Hydraulic Engine. 260
 "Jim Crow" Tool Holder, A 79
 Kelly's Directory 70
 Key Seater, Portable Bore. 392
 Kinks, A Few 42
 Kinks in the Drawing Room, J. D. Riggs 140
 Large Pipe Threading Machine, A 338
 Lathe for Heavy Work, A. 29
 Lathe for Threading Taps, A Special 379
 Lathe, A Gisholt Finishing Gear Blanks 28
 Lathe Built at Watertown, N. Y., An Old, C. E. Kinne 83
 Level Headed 125
 Level A "Which Way" 29
 Making Wood Poles, Milo 372
 Man Who Never Got Rattled, The 260
 Machine Tool Countershafts, James Vose 345
 Machinery, American Gear Cutting 313
 Machine Shop Fits 81
 Machine Copying 48
 Machine Shop, Standard Fits in the 67
 Machinist, A. F. W. Clough. 301
 Machine for Finishing Cylinders, A. J. H. Frances. 359
 Make It Plain 147
 Marine Engine Designs, Wm. Burlingham.
 Piston and Connecting Rods (3) 43
 Valves and Valve-Gears (4) 120
 Valve Gears Eccentrics and Eccentric Straps (5) 277
 Mathematics 114
 Measurements, Standard 49
 Mechanical Draft, Walter B. Snow.
 (2) 11
 (3) 36
 (4) 85
 (5) 133
 (6) 170
 (7) 203
 Mechanism for Mechanics, Prof. C. H. Benjamin 22
 Mechanism of Gear-Cutting Machines, L. D. Burlingham 302, 347
 Meeting of Mechanical Engineers, The 147
 Microscope, Under the, A. L. G. 233
 Milling, Another Lesson in. 284
 Milling Machines, Pulley. 60
 Milling Machines, Van Norman "Duplex" 169

Modern American Shop, A. 9
 Model Saxon Shop, A, Robert Grimshaw 84
 More About Gearing, Retsel 358
 Near Cutter, Arbor, A, E. L. O. K. 383
 Niagara Falls Convention, The 337
 Notes, Here and There, John Lookaback 112
 Notes from a Cleveland Shop, C. H. Benjamin. 201
 Notes from Notown, Ichabod Podunk. (19) 81
 (20) 151
 Notes from an English Shop, Some, James Vose. 1
 Notes from the Fitchburg Machine Wks. 72
 Omnimetre, Sexton's 262
 Odontograph, Grant's 222
 Patent Application, A Point on, C. L. Redfield. 53
 Pattern Making, Practical, I. McKim Chase, 6, 51, 75, 125
 Pattern Storage, Cisnarf. 177
 Planing Links, An Attachment for 170
 Planoid and Octoid Teeth. 338
 Point on Patent Application, A, C. L. Redfield. 53
 Poles, Making Wood, Milo. 372
 Portable Boring and Drilling Mch. 109
 Portable Bore Key Seater. 392
 Power on Naval Vessels, Transmission of 167
 Power Presses, Early 174
 Practical Electrical Definitions, L. D. Bliss. 137
 Practical Pattern Making, I. McKim Chase, 6, 51, 75, 125, 153, 175, 226
 Principle of the Injector, The, W. H. Booth 180
 Principles of Belting, The, Retsel 393
 Problem, That Worn Gear. 126
 Problem in Cone Designing, H. M. Norris. 83
 Pipe Cutter, A New Armstrong 127
 Pipe Threading Machine, A Large 338
 Pump Tests 343
 Pump in the City, The Biggest 16
 Pump, Pointers on. 28
 Reaming Machine, A. 92
 Reduction in the cost of Steam Power from 1870 to 1897, F. W. Dean. 144
 Roller-Bearing Data 27
 Saw, A New Shop 93
 Schools, Summer 306
 Scrapers and Surface Plates, W. H. Van Dervoort. 383
 Screw-Propeller Pattern, I. McKim Chase. 386
 Seen in Various Shops (4), A. Hardcase 16
 Separator and Filter, A. 367
 Sewing Machinery, F. W. Brady 212, 254, 281
 Shafts of Equal Strength, Hollow and Solid, W. Sangster 148
 Shall We Welcome Visitors? Been There 220
 Shop Saw, A New 93
 Shop System, A New, G. D. Chapman 209, 237
 Shop, A Model Saxon, Robt. Grimshaw 84
 Shop Work, An Example of. 142
 Shop with a History, A. 54
 Shop Talks with Young Mechanics, W. H. Van Dervoort. 149, 181, 218, 250, 285, 383
 Shops, Seen in Various, A. Hardcase 16
 Science vs. Main Strength, Been There 352
 Siemens & Halske Works, The, Robert Grimshaw. 165
 Single-Pointed vs. Many-Pointed Cutting Tools, Bell Crank 353
 Slide Rule, The, A. H. Eldridge 123
 Slotter, The Use of the. 146
 Something to Think About. 74
 Spiral Gearing, W. H. Van Dervoort 323
 Springs, What a Machine Designer Should Know About, Begtrup 267, 347
 Spur Gear Arithmetic, A. B. Babbitt 89
 Standard Fits in the Mch. Shop, A. A. Fuller. 67
 Steam Gauge, The First 145

Steam-Pipe Coverings, Tests on	340
Steam Power from 1870 to 1897, Reduction in the Cost of, F. W. Dean	144
Steels, High Carbon, vs. Low Carbon	357
Studs vs. Tap Bolts	376
Tapping Machines, Automatic	92
Taps of Uniform Pitch	39
Technical Education in a Lancashire Town	293

Test Bars and Their Relation to the Strength of Castings, H. E. Field	173
Test Bars, A Word About, R. Moldenke	239
That Broken Press, Oberlin Smith	305
Tool Holder, The Seldis	360
Tool Holder, A "Jim Crow"	79
Tool for Planing Racks, A.	172
Tool Holder, A New	305
Tools, Brass Working, Fred H. Colvin	18, 71

Transmission Dynamometer, Some New Forms of, John J. Flather	367
Transmission of Power on Naval Vessels	167
Turret Lathe, The Home of the Flat	39
Variable Speed Countershaft	360
From Various Shops, A. L. Graffam	221
Water Tank, Perambulating	353
Water-tube Boilers and Liquid Fuel for the Navy	123

Way of the Bicycle, The	114
Wederburn, The Case of John	80
Werner's Old Note Book, Extract from, Jarno	228
What Mechanics Think	30
60, 94, 128, 160, 187, 222, 257, 288, 327, 354	
What a Machine Designer Should Know About Springs, J. Begtrup	267 and 347
Why Study Algebra? Retsel	274
Worm Gear Problem, That	126

What Mechanics Think.

Another Cutting-off Tool	354
Another Width Gauge	257
About Anchor Bolts	257
An Explanation	128
Attachment for Micrometers	354
Anchor Bolts	96
Blacksmith's Scale, A.	187
"Bite" of a File, The	222
Boring an Eccentric Strap	160
Butterfly Valves	389
Camera Flends Wanted	95
Cheap and Simple Center Indicator, A.	61
Chipping Keyways	222
Chuck for Holding Split Nuts	288
Cleaning Core Holes	288
Composition for Writing Names on Tools	327
Combination Tool	95
Cone Pulleys Again	288
Construction of the Pantograph for Indicator Reducing Motion	160
Copying Outright	60
Cutting Right-Hand Spirals	257
Device for Turning Cams	222
Device for Cutter Bars, A.	161
Device for Relieving Taps	354
Diametrical Pitch Again	392
Diametrical Pitch	354
Drill Chucks	354
Drop Presses	32
Eccentric Chucking Fixture	95
Facing Cutter A.	327
Few Notes, A.	30
Figures Right Side Up	222
File Rack, A.	257
Filing Soft Metals	257
Finishing Work—Boring Eccentric Straps	94

Fit a Large Taper Key, To	288
Fixture for Cutting Spirals	187
Force Flits, More About	32
Free Merry Go-Round, A.	94
Friction Ratchet Feed, A.	60
Graduating Scales	162
Grinding in Valves	161
Grinding a Drill for Cutting Brass	187
Handy Wood-Working Devices	30
Handy Drill Rest, A.	354
Handy Chucks for Light Work	257
He Was a Yankee	389
Home-made Spoke Shave, A	222
How a Gun Lost Its Lining	327
How the Old Blacksmith Made the Bullet Molds	354
I'm proving a Monkey Wrench	161
Information Wanted	30
Inking Over Erasures	257
Inches to Millimetres	257
Job of Planing, A.	187
Keep the Shafting in Line	161
Keep Up the Speeds	388
Keeping Account of Departments	222
Kinks for the Lathe	354
Knurled Screw Heads—Tempering Small Drills	391
Laying Out a Chucking Line	222
Large Job with Small Tools	222
Lathe Graduations	288
Lathe Attachment for Turning Irregular Work	160
Lesson in Tempering, A.	222
Letter from Ohio, A.	128
Light in the Machine Shop	222

Long Reach Cutting-off Nuts	288
Looking for a Leak—Hardening Cast Iron	60
Making Ball and Socket Joints	327
Material for Grinding Joints in Brass, A.	95
Milling Device	228
More About Eccentric Straps	161
More Worm Gear Data	257
Names on Machine Frames	187
Names on Machine Frames	128
No Admittance vs. Visitors Welcome	187
Pipe Wrench, A.	94
Planning Connecting-rod Straps	288
Principles of Belting, The	393
Problem for Card Sharps	389
Problem, A.	30
Pry-over Jack	391
Pulverizer, A.	388
Putting on Belts	94
Query, A.	288
Reamers with Inserted Blades	94
Relieving Milling Cutters	354
Repairing a Screw	327
Rig for Cutting Scrolls, A.	288
Rush Job, A.	61
Samples vs. Drawings	187
Saw Kerf for Pattern Makers, A.	391
Shop Problem, A.	187
Shop Parallels	187
Simple Measuring Machine	327
Smoke Prevention	257
Solution to Mr. Rogers' Problem	61

Something for Engineers	95
Splicing Device, A.	390
Split Pulley Evidence, More	30
Spherical Boring Rig	61
Square Centers	187
Squaring Numbers	94
Straightening Square and Round Plates	257
Straight-Line Motion, A.	288
Suggestion, A.	327
Suggestions for Using the Slide Rule	187
Summer School at Cornell University, The	288
Tap Bolts, Studs vs.	376
Taper Turning Device	257
Tempering Small Drills	391
Testing a Square	222
That Fatal Pin	327
That Milling Machine Blunder	390
Threaded Driver for Bolts and Studs	160
Tool Chest, etc., A. F. E. Rogers	385
Tool-Holding Device for Grinding Inserted Cutters	96
Truing Up Work	327
Tube Sheet Cutter	327
Turning Balls	257
Turning Governor Balls	187
Two or Three Points	222
Universal Female Center	222
Various Kinks	288
Wide Belts	128
Width Gauge, A.	187
Winding Small Springs	364
Works of Reference of Measurements	94
Working Copper	187

How and Why.

81. Air Compressor, quantity of Air Supplied by a Duplex	263
81. Annealing Self-hardening Steels	263
67. Anti-friction Step Bearing	229
97. Balancing Small Engines	361
38. Balls of Cast Iron, Strength and Weight of	130
26. Belt Transmission, Increasing the Power of	97
57. Belt, the Effect of Widening a	192
34. Blow-off Pipes, Valves for	129
111. Bluing Small Screw Heads	361
71. Boilers, to Keep from Rusting When Standing Unused	229
84. Boiler Water-line, Reason for Trouble with	263
73. Boiler Capacity, formulas for	229
49. Boiler Tube, Efficiency of the "Serve"	192
76. Boilers That Will Not Keep Up Steam	229
37. Boiler Feeding, Relative Economy of Injector and Steam Pump for	130
53. Bolts, the Size of Stock to Use for Square and Hex	193
108. Bottoming Taps	361
33. Braking Power of a Train, When the Wheels Slide and When They Turn	129
44. Braking a Train, Most Effective Way of	163
25. Case-hardening Liquids	295
110. Case-hardening Small Pieces of Wrought Iron	361
74. Case-hardening Machinery Steel	229
103. Chain-feed for Lathes	361
63. Cleaning Brass	229
69. Clinker, Definition of	229
51. Coal, Wood and Natural Gas as Fuel	192
19. Composition for Valves, Cocks, Etc.	96
103. Compound Lathe Gearing to Compute	361
86. Condenser Pipe and Arrangement for the Same	295
65. Continuous Speed Cones, Use of	229
6. Counterbalancing Locomotive Drive Wheels	34
Copper, to Give a Coating with	112
61. Crow-foot Battery, Voltage of	192
101. Cupola, Tuyeres and Air Pressure for a	101
107. Cutting Metal with a Steel Disc	361

70. Cylinders for Triple-expansion Engines, Proportions for	229
11. Derivation of the Constant, 3.1416	62
72. Driving Shafts at Right Angles, Belting for	229
39. Economy of High-speed 118. Electric Plant with Light Load, Best Method of Operating	395
354 and Low-speed Engines	130
36. Elevator Cables, Effect of Grease on	130
2. Exhaust, Deadening the Noise of	34
94. Flat Drill Ground Semi-circular, Results from	295
9. Flutes in a Worm-wheel Hob, Number of	62
88. Friction of a Bolt-thread	295
63. Gas-pipe Taper	229
64. Globe Valves, Correct Position for	229
16. Hardening Arbors so as to Avoid Springing	64
42. Hardening Taps to Avoid Springing	163
3. Hardening Cast Iron	34
59. Heating with Overhead Pipes	192
5. High-pressure Steam and Short Cut-off	34
15. Horse Power, Number of Men Equivalent to a	64
60. Indicator Diagrams, The Error in	192
98. Indicator Card, Criticism of	361
52. Induction Coil, to Make an	192
86. Jet Blower, to Make a	295
4. Lead, Effect of Increasing	34
80. Leather for Packing, Best Kind of, to Use	263
1. Length of the Longest Planer	34
116. Lifting Hot Water with an Injector	295
104. Lining Up Shafting	361
29. Logarithms the Practical Use of	97
55. Losses Through Condensation in Underground Pipes	192
91. Low Pressure Steam vs. High Pressure, Throttled	295
92. Lubricating Compound for drilling	295
27. Machinists as Draughtsmen	97
85. Magnetic Circuit of a Motor	263
115. Mandrels, The Construction of	395
93. Marking Tools, Acid for	295
30. Melting Snow by Steam	129

32. Meyer Cut-off Arranged to reverse	129
86. Oil Separator, The Use of an	295
106. Open Circuit and Closed Circuit Work	361
73. Pendulum Governors, Calculating the Speed of	231
83. Pitch of Gears and Size of Blanks	263
79. Pipe Connecting with a Turbine Draft Tube, Effect of a	263
46. Pipe Threads, Diameters at Top and Bottom of Threads	163
20. Pounding in a Steam Engine, Remedy for	96
21. Power Used in Different Departments, How to Determine	96
62. Pressure Exerted by a Nut	229
121. Pressure at Top and Bottom of a Boiler	396
13. Prony Brake, Description of	64
28. Proportions for Gear Wheel Patterns	97
86. Propeller for Small Boat, Size of	295
41. Pulley Crowns, Taper and Shape of	163
117. Qualifications for Becoming an Engineer	395
88. Reducing the Speed of an Engine, Without Reducing the Speed of the Machinery	295
88. Reducing Speed of an Engine, Effect Upon Economy of	295
12. Repairs to Lamp Wires Without Turning off the Main Current	62
50. Right-angled Triangle, Calculating the Degrees in	192
40. Rope Drive, Speed for	130
18. Rust Joint, Effect of in Boiler Construction	96
54. Rusting of Tools, to Prevent	192
47. Safety Valve Problems, Method of Solving	163
120. Scale in a Pump, to Lay Out the	229
67. Schiele Curve, How to Remove	396
31. Screws with Double and Treble Threads, Advantages and Pitch of	129
102. Shaft Boxes, Material for Large, High Speed	361
57. Slipping belt, How to Remedy	192
119. Small Steam Engine, Suggestions for Building	395
69. "Soft Patch" and "Hard	97
66. Valve Gear, Value of and Probable Results from a New	295
80. Valve Seat for Hydraulic Jack, Angle for	263
36. Viscosity of oil, Testing the	129
89. Volume and Temperature of Steam, To Find	295
25. Waterline Connections Clogged with Dirt, Remedy for	97
68. Waterproof and Fireproof Cements	229
109. Welding iron, Action of tin or lead in	361
35. Worm Wheels, Setting the Cutter for	129
90. Worn Lead Screw, Effect of in Cutting Thread	295
8. Woodturning Lathe, Cone Speeds, For	62

